U. S. DEPARTMENT OF ENERGY
WORK BREAKDOWN STRUCTURE DICTIONARY
PART II - ELEMENT DEFINITION

1. PROJECT TITLE/PARTICIPANT	2. DATE	3. IDENTIFICATION SITE
Environmental Management/Paducah Remediation Services, LLC (PRS)	06/29/07	Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)

4. WBS ELEMENT CODE	5. WBS ELEMENT TITLE
04.11.02.02	DMSAs

6. INDEX LINE NO.	7. REVISION NO. AND AUTHORIZATION	8. DATE
N/A	Rev. 0	06/29/07

9. APPROVED CHANGES
N/A

10. SYSTEM DESIGN DESCRIPTION	11. BUDGET AND REPORTING NUMBER
N/A	N/A

12. ELEMENT TASK DESCRIPTION

WBS STRUCTURE

The scope of this element includes the following subelements:

- WBS 04.11.02.02.01 DMSA Subproject Management
- WBS 04.11.02.02.02 DMSA Operations

INTRODUCTION

There are 160 U.S. Department of Energy (DOE) Material Storage Areas (DMSAs) currently identified at the Paducah Gaseous Diffusion Plant (PGDP). Since September 5, 2000, multiple notices of violations (NOVs) and an administrative complaint were issued by the Kentucky Department for Environmental Protection against the DOE related to DMSAs. This has resulted in an Agreed Order (October 2003) between DOE and the Commonwealth of Kentucky (KY). The primary objective of the DMSA subproject is to implement the Agreed Order. This subproject also will include characterization and disposition of radioactive wastes discovered or generated within the 160 DMSAs at PGDP.

LOGIC RELATIONSHIPS

Interfaces

Internal to PRS

- All PRS project managers and staff
- All subcontractors

External to PRS

- U.S. Department of Energy (DOE) Portsmouth/Paducah Project Office (PPPO) and support contractors
- DOE Headquarters (HQ) or other DOE sites (if applicable)
- U.S. Environmental Protection Agency (EPA)
- Commonwealth of Kentucky (KY)
- Site tenants including United States Enrichment Corporation (USEC); Uranium Disposition Services, LLC (UDS); and Swift and Staley Team (SST)
- USEC services in the area of property, information technology, radios, etc.
- SST, particularly in the areas of property management, information technology, and security.
- Nevada Test Site (NTS): Profiling and disposition of newly generated and classified and fissile low-level waste (LLW), if required or applicable.
- Energy*Solutions*: Profiling, treatment, and disposition of mixed and LLW, if required or applicable.
- Toxic Substance Control Act (TSCA) Incinerator, if required or applicable.

- Commercial Treatment, Storage, and Disposal (TSD) Facility: For treatment and disposal of nonradioactive hazardous waste, if required or applicable.
- Stakeholders
- Citizens Advisory Board and supporting contractor EHI.
- DOE Integrated Safety Management System (ISMS) Verification Team
- Other non regulatory key interfaces

Time Sequencing with Other Work

- All activities must be completed in accordance with identified contract milestones.
- All activities must be complete prior to 09/30/09, contract completion with the exception of the converters in DMSA 331-09 and 331-11 which will be left for D&D of the PGDP.
- Legacy waste currently stored in DMSAs will be characterized and disposed of by the legacy waste subproject WBS 04.12.01.01.
- Solid waste management units (SWMU) inspection schedules for DMSAs will be driven by the master facility inspection schedules and the compliance deliverables from the environmental compliance database.

SCOPE DESCRIPTION

WBS 04.11.02.02.01 DMSA Subproject Management

Provide overall management activities associated with characterization, packaging and disposition of wastes [LLW, mixed LLW (MLLW), Resource Conservation and Recovery Act (RCRA), TSCA, etc.] and equipment currently stored in the identified DMSAs. These DMSAs are located in 17 outside storage locations (OS-02 through OS-18) and in storage areas within the eight operating buildings (C-310, C-331, C-333, C-335, C-337, C-400, C-409, and C-720). Additional activities performed under this subelement include the following:

- Perform technical, contractual, and project functions necessary to effectively manage and report scope, schedule, and budget.
- Maintain all activities within the defined safety, environmental, and quality requirements.
- Perform technical and personnel management functions.
- Maintain technically qualified and properly trained personnel. Prepare and submit characterization/inventory reports as DMSAs are characterized in accordance with the Agreed Order and the Characterization/Remediation Plan. This effort requires extensive documentation beginning with the fieldwork. Each piece of material handled in the field requires a determination as to characterization, based either on process knowledge (PKN), if possible, or smear analysis or sampling if PKN is not usable. Each piece of material is logged individually during the process, and a description, estimated weight, and estimated volume are determined. A complete photographic file of the characterized items is taken and maintained. One individual per crew is responsible for inscribing this data and the subject matter experts (SMEs) determine the disposition of the item. These daily material logs are compiled and become the basis for the Final Inventory/Characterization Report for the DMSA. They also are instrumental for developing the Closure Plans and Closure Reports.
- Prepare Fieldwork Request packages to plan and direct DMSA characterization and packaging activities, including Radiological Work Permits (RWPs) and Activity Hazard Analysis (AHAs).
- Provide material data input, including technical basis documents (TBDs) for preparing waste profiles to multiple disposal facilities.
- Prepare Land Disposal Restriction paperwork to support waste disposition from DMSAs to the on-site landfill.
- Perform self-assessments and management assessments of ongoing work activities on monthly and

quarterly bases.

- Plan and administer all closure, partial closure, post-closure, and deferral activities, as applicable, in accordance with the Agreed Order, the Federal Facility Agreement (FFA), applicable permits, the Agreed Order Closure Plan, and other regulatory agreements and documents.
- Support transfer of inside DMSAs to USEC following closure.
- Submit annual revisions of the SWMU Assessment Reports and RCRA Hazardous Waste Permit Part A for all applicable DMSAs where hazardous waste has been discovered (by January 15th of each contract year).
- Submit RCRA Hazardous Waste Permit Part B modifications, as required.
- Comply with all aspect of the Agreed Order (file DWM-31434-042, DAQ-31740-030, and DOW-26141-042).
- Provide technical and administrative support to DOE for DMSA litigation activities, as required.
- Monitor/inspect DMSA-related SWMUs in accordance with the RCRA permit. Activities include inspection, maintenance, investigations, and reporting, as appropriate, for the SWMUs covered by the RCRA permit.
- Generate Annual Disposition Report to KY of material disposed of from the DMSAs.
- Ensure characterization data is in the Oak Ridge Environmental Information System (OREIS).
- Develop, evaluate, and report project performance metrics.
- Interface with DOE, KY, EPA, other prime contractors, and stakeholders, as needed.
- Provide for annual update of the C-331 TSR documents and annual surveillance for NCSE for the converters left in C-331 after completion of the contract.

The method(s) used for determining earned value for this WBS element is Level of Effort.

Before beginning fieldwork, the project team must have an internal field review (IFR). For this IFR, the project team will put together a work package. This work package includes the following:

- Work instructions – includes hold points
- Training matrix and evidence of training
- UCD/USQD
- Lessons Learned
- Work authorization and work release from facility managers
- Procedures
- AHA
- Excavation/Penetration Permits
- RWP
- Team Meeting documentation
- Project Organizational Chart

In addition to the above, a Sampling Analysis Plan (SAP), Quality Assurance Plan (QAP), Waste Management Plan (WMP), and Health and Safety Plan (H&S) may be needed for any non-CERCLA actions.

For CERCLA actions, the appropriate FFA/CERCLA documentation will be required which will include SAP, QAP, WMP, H&S Plan, and other documents, as applicable to the action. These documents may require regulatory approval.

The work package and other documentation are developed by personnel that charge to this project and also by personnel that charge to project support service center (i.e., QAP and RWP).

1. PROJECT TITLE/PARTICIPANT	2. DATE	3. IDENTIFICATION SITE
Environmental Management/Paducah Remediation Services, LLC (PRS)	06/29/07	Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE	**5. WBS ELEMENT TITLE**	
04.11.02.02	DMSAs	

WBS 04.11.02.02.02 DMSA Operations

The 160 DMSAs at Paducah are located in 17 outside storage locations (OS-2 thru OS-18) and in storage areas within the eight operating buildings (C-310, C-331, C-333, C-335, C-337, C-400, C-409, C-720). Many of these storage areas include RCRA-regulated materials and SWMUs (SWMUs 213–359) requiring closure under the Agreed Order. Work is currently in progress to characterize and disposition the materials stored in these areas. The materials were prioritized for characterization based on greatest potential impact to the workers and the environment. Priority A DMSAs have the greatest potential RCRA and TSCA concerns, Priority B DMSAs have a substantial number of uncharacterized containers with a potential for RCRA and TSCA concerns, and Priority C DMSAs are the remainder to be worked with minimal potential for RCRA or TSCA concerns. Each DMSA also is assigned to one of three phases, based on Nuclear Criticality Safety (NCS) characterization, defining the need for criticality controls and nuclear security measures during work activities. The DMSAs collectively are defined as a Category 2 Nuclear Facility.

As of the date of transition to PRS (April 24, 2006), the total volume of material remaining to be characterized is 175,000 ft^3. Priority A DMSA characterization is complete. The total quantity of material remaining and requiring disposition is 500,000 ft^3, of which 2,200 ft^3 is projected to be RCRA waste and 200 ft^3 is projected to be TSCA waste. Of the 500,000 ft^3, 190,000 ft^3 is process equipment which will be left for the final D&D of the PGDP. Final Characterization/Inventory Reports for 47 DMSAs are complete.

The DMSA scope for this element includes the following:

- Materials Characterization
  - Perform all work activities necessary to complete characterization of all DMSA materials in accordance with the Characterization/Remediation Plan (BJC/PAD-186/R4), the Waste Acceptance Criteria (WAC) (BJC-PAD-011); and the Agreed Order (file DWM-31434-042, DAQ-31740-030, and DOW-26141-042).
  - Inspection by DMSA inspectors who use PKN to determine characterization requirements, sampling necessities, NCS, and RCRA concerns and classification issues;
  - New or reusable equipment that is discovered during the characterization process is to be offered to USEC for reuse; if USEC accepts the material, return it to their control and document the quantity transferred.
- Waste Disposition
  - Perform all work activities necessary to disposition all material (excluding fixed equipment inside the cascade buildings (approximately 190,000ft^3) and 13 converters that will be handled during the general decontamination and decommissioning of the PGDP) contained within Priority A, Priority B, and Priority C DMSAs, in accordance with the Characterization/Remediation Plan (BJC/PAD-186/R4).
  - Disposition all newly discovered hazardous waste in accordance with the Agreed Order and the Characterization/Remediation Plan.
- RCRA Closure
  - Perform all activities necessary to complete RCRA closure for all DMSAs.

The methods used for determining earned value for this WBS element are Actual Unit Completion and Level of Effort.

Before beginning fieldwork, the project team must have an IFR. For this IFR, the project team will put together a work package. This work package includes the following:

- Work Instructions – includes hold points
- Training Matrix and evidence of training
- UCD/USQD

- Lessons Learned
- Work authorization and work release from facility managers
- Procedures
- AHA
- Excavation/Penetration Permits
- RWP
- Team Meeting documentation
- Project Organizational Chart

In addition to the above, a Sampling Analysis Plan (SAP), Quality Assurance Plan (QAP), Waste Management Plan (WMP), and Health & Safety Plan (H&S) may be needed for any non-CERCLA actions.

For CERCLA actions, the appropriate FFA/CERCLA documentation will be required which will include SAP, QAP, WMP, H&S Plan, and other documents, as applicable to the action. These documents may require Regulatory approval.

The work package and other documentation are developed by personnel that charge to this project and also by personnel that charge to project support service center (i.e., QAP and RWP).

DELIVERABLES

WBS 04.11.02.02.01 DMSA Subproject Management

Element Milestones

- Annual revisions of the SWMU Assessment Reports and RCRA Hazardous Waste Permit A, January 15th of each contract year.

Element Deliverables

- Paducah PRS Quality Assurance (QA) Project Plan
- Paducah PRS Environmental, Safety, and Health (ES&H) Plan
- DMSA Final Inventory/Characterization Reports 60 days after final OREIS data entry
- Revisions to the RCRA Part A Hazardous Waste Permit by January 15th of each year through the contract performance period
- SWMU Assessments Reports by January 1st of each year through the contract performance period
- Newly Discovered Hazardous Waste notifications within 20 days after OREIS data entry
- Closure Plans (or closure deferral notification)
- Final Closure Reports
- Annual update to the Site Treatment Plan
- Hazardous Waste Inventory Report [Superfund Amendments and Reauthorization Act (SARA) § 312] monthly
- Annual Toxic Chemical Release Inventory (SARA§ 313)
- Sampling and Analysis Summary Report annually
- RCRA Permit Renewal Application
- Paducah PRS ES&H Plan
- Provide input to the following reports and submittals (if applicable):
  - Monthly Project Performance Report
  - Risk Management Plan updates
  - Site Management Plan
  - SWMU Assessment Report

- Semiannual Critical Analysis Report
- Presentations
- FFA briefings
- Labor determinations
- Gold Chart Performance Metrics
- Annual Compliance Agreement Report
- Annual ISMS Update
- Annual Work Smart Standards Update
- Financial Reporting, Management Analysis Reporting System
- Annual Statement of Costs Incurred and Claimed
- FFA Semiannual Progress Report
- Remedial Action/Regulatory Commitment Tracking Report
- Other reports/documents, as necessary

WBS 04.11.02.02.02 DMSA Operations

Element Milestones

- Complete characterization of all Priority B DMSAs – September 30, 2006
- Complete implementation of the SAP on all containers identified as potentially containing listed hazardous waste, which are stored in Priority C DMSAs – September 30, 2007
- Complete characterization of all Priority C DMSAs – Within the period of contract performance
- Complete disposition of all Priority A, Priority B, and Priority C material – September 30, 2009
- Complete disposition of materials located in DMSA OS-14 and OS-4 – September 30, 2006.

Element Deliverables

- Provide technical support for characterization of the 104 DMSAs with incomplete characterization
- Prepare DMSA Characterization/Inventory Reports for the 104 DMSAs with incomplete characterization
- Provide technical support for the 137 DMSAs with incomplete material disposition
- Develop NCS evaluations, as required, for characterization and material disposition in the 120 Phase 1 and 2 DMSAs
- Revise documentation for the RCRA Part A Hazardous Waste Permit annually
- Update SWMU Assessments Reports for DMSA-related SWMUs annually
- Support annual update to the Site Treatment Plan
- Develop closure plans, partial closure plans, or closure deferral notification for 160 DMSA-related SWMUs over the course of the contract
- Prepare Final Closure Reports for 160 DMSA-related SWMUs over the course of the contract
- Provide input for annual Hazardous Waste Inventory Report, Annual Toxic Chemical Release Inventory, and Sampling and Analysis Summary Report annually
- Provide input to RCRA Permit Renewal Application for one renewal cycle
- Manage SWMU inspections and maintenance implementation and reporting for 148 DMSA-related SWMUs (SWMUs 76, 213–359), and more if needed.
- Manage converters in storage until D&D of the PGDP.

~~REQUIREMENTS~~

- Agreed Order (DWM-31434-042, DAQ-31740-030 and DOW-26141-042), October 2003
- UEO-1066, as updated - Lease Agreement Between DOE and USEC, Revision 4, dated October 30, 2001
- Enclosure to GDP 95-0018, as updated - USEC and DOE Resolution of Shared Site Issues, Revision 1, dated March 30, 1998

- KY Hazardous Waste Permit (KY8-890-008-982)
- WAC for all applicable treatment and disposal facilities that were in effect on April 24, 2006
- PRS ISMS
- Applicable PRS plans, policies and procedures.
- Applicable DOE Orders
- Applicable Federal Acquisitions Regulations

It is the core value of PRS that the safety and health of every worker, the public at large, and our environment are the most important assets that we are entrusted to protect. To accomplish this, an ISMS, based on DOE's ISMS, has been implemented that incorporates the five core functions and is based on the seven guiding principles. The objective of ISMS is to systematically integrate safety and environmental protection into the planning and execution of all work activities. The term safety encompasses Nuclear Safety, Industrial Safety, Industrial Hygiene, Occupational Health, Health Physics, and environmental issues. ISMS requirements flowdown to PRS subcontractors. The five core functions are (1) define the scope of work, (2) analyze hazards, (3) develop and implement hazard controls, (4) perform work within controls, and (5) provide feedback and continuous improvement. The seven guiding principles are (1) line management responsibility for safety, (2) clear roles and responsibilities, (3) competence commensurate with responsibility, (4) balanced priorities, (5) identification of safety standards and requirements, (6) hazard control tailored to work being performed, and (7) operations authorization.

Before a subproject begins, several activities must be completed that demonstrate that all involved in the project have completed rigorous health and safety reviews and that all potential hazards of doing the work have been identified. The routine activities in remedial actions are conducted in accordance with standard operating procedures, activity hazard analyses, and Integrated Safety Management plans. Nonroutine work will require a readiness assessment, as necessary, to ensure complete health, safety, and environmental reviews prior to work start. This assessment is conducted by people experienced in similar kinds of work with the right to examine all aspects of a project about to commence and requires that the project team provide documented evidence that any applicable requirements of the job have been met.

SCOPE ASSUMPTIONS

- Disposition will be based on material characterization data with preference to on-site disposition at C-746-U landfill for all materials meeting the landfill WAC.
- For LLW materials requiring off-site disposition, preference will be given to NTS, unless commercial disposition pricing and schedule clearly is advantageous to DOE.
- MLLW RCRA solid wastes will be disposed at Energy*Solutions*.
- MLLW TSCA wastes (and RCRA liquids and soft solids, if identified) will be treated and disposed of by the TSCA Incinerator in Oak Ridge, TN. Other incinerators are available, at increased cost, if TSCA Incinerator is not operating.

COMPLETION CRITERIA

WBS 04.11.02.02.01 DMSA Subproject Management

- Submit final characterization/inventory reports on all DMSAs.
- Approval of RCRA closure reports for all DMSAs where hazardous wastes were discovered.
- Deliver copies of all documents and files to infrastructure contractor for archive.
- Deliver copies of all documents to the Infrastructure Contractor for placement in the Environmental Information Center.

- Provide for ongoing annual TSR updates and NCSE surveillance of converters in C-331 until D&D of the plant.

WBS 04.11.02.02.02 DMSA Operations

- All DMSA materials shall be characterized with final characterization/inventory reports submitted.
- All DMSA materials (from Priority A, Priority B, and Priority C DMSAs) shall be disposed of with the exception of fixed equipment inside the cascade buildings and 13 converters that require special handling and segmentation. These items will be handled during the general decontamination and decommissioning of the PGDP.
- All DMSA boundaries (blue and white rope and postings) will be removed.
- Inside DMSAs will be leased back to USEC.
- Satellite accumulation areas and general storage areas will be closed and the materials will be disposed of.

RISK MANAGEMENT

See Risk Management Plan for analysis.

Risk was mitigated through the following efforts:

- PRS will work closely with USEC over the course of the project and planning for the project to resolve any potential issues regarding movement of material through USEC or shared space via the Shared Site Committee.
- The project utilizes reviewed and approved procedures for selecting waste containers and for packaging waste into the containers. Employees are trained and qualified to the packaging procedures, and oversight is provided by various groups during the packaging activities. Transportation vendors are selected from the DOE Approved Carriers list to assure that only trained and qualified drivers are used.
- NTS accepts classified and fissile material. If transportation issues listed above address concerns with UF_6, it will be acceptable to NTS for disposal.
- PRS will utilize its strong, on-site regulatory affairs presence to prevent occurrence and mitigate the results of any such occurrence.
- The approved DMSA SAP will be used. PRS will work with regulators to improve the characterization process, through the use of process knowledge and field testing. When PKN and field testing are not sufficient, sampling and analysis will be performed.
- Additional data will be obtained, as required.
- Extensive NCS evaluations will be conducted for hazard categorization eliminating any potential concerns.
- NCS personnel will be assigned to evaluate access capabilities to locations requiring waste identification/characterization.
- Conduct NCS evaluations for access control and movement of materials for proper identification. An existing Category 2 facility will be used for on-site sorting and segregation of materials.
- PRS will mitigate this risk by identifying and utilizing an appropriate area to allow inspection, characterization, decanting, assay, and staging, thus allowing PRS the opportunity to inspect for and remove any prohibited or nonconforming items prior to transport for disposition. By using an existing facility with an existing Category 2 authorization basis, PRS avoids the need to construct a new facility with an entirely new Documented Safety Analysis (DSA) for these activities. These activities will be evaluated using the Unreviewed Safety Questions (USQ) process. These activities also are consistent with the Agreed Order and existing permits.
- PRS will work closely with DOE and USEC to assure the process for leasing DMSA areas back to USEC takes place within the contract timeframe. Efforts will begin as soon as KY approves final

RCRA closure of the first DMSA.

- Converters will remain until D&D of the PGDP.

CERCLA AREAS AND SWMUs

SWMU No.	Description	DMSA No.
213	Scrap metal, wood, concrete parts, etc.	OS-02
214	Drums, desk, product oil drums, plastic dikes	OS-03
215	Railroad tank car (rainwater discovered in car)	OS-04
216	Fire extinguishers, drums, concrete block, scrap metal	OS-05
217	Scrap materials, excess equipment, drums, misc. items	OS-06
218	Drums, plastic wrapped items, process equipment	OS-07
219	Fiberglass tank, the other two tanks are SWMU 32	OS-08
220	Vehicles, some process equipment, Cushmans	OS-09
221	Valves, tank (scrap metal)	OS-10
222 & 76	Miscellaneous equipment; sulfuric acid tank in SWMU 76.	OS-11
223	Excess equipment, scrap items	OS-12
224	Roll-off bin with 49 drums	OS-13
225	Tank cars (4) and flatbeds (4)	OS-14
226	Converters, small cylinders, tank	OS-15
227	Miscellaneous equipment	OS-16
228	Forklifts, towmotors, etc.	OS-17
229	Railroad lay-down yard with miscellaneous scrap	OS-18
230	Pumps (4)	C310A-01
231	Process equipment, metal parts, pallets of materials	C310-02
232	Process equipment, tanks, metal parts	C310-03
233	Pumps (2 large)	C310-04
234	Air dryer (1)	C310-05
235	K-25 and Portsmouth process equipment	C331-01
236	Currently empty	C331-02
237	Miscellaneous process equipment	C331-03
238	LLW drums (asbestos, rags, floor sweep)	C331-04
239	Process equipment, motors, piping	C331-05
240	Process equipment, miscellaneous	C331-06
241	Wood box with pipe	C331-07
242	Currently empty	C331-08
243	K-25/Portsmouth equipment, scrap metal, and B-25 marked empty	C331-09
244	K-25/Portsmouth equipment (centrifugal compressor parts), pallets	C331-10
245	Transformers	C331-11
246	Process and miscellaneous equipment, tools	C331-12
247	Process equipment	C331-13

1. PROJECT TITLE/PARTICIPANT Environmental Management/Paducah Remediation Services, LLC (PRS)	2. DATE 06/29/07	3. IDENTIFICATION SITE Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE 04.11.02.02	5. WBS ELEMENT TITLE DMSAs	

248	Miscellaneous process equipment, valves, heat exchangers, piping	C331-14
249	Miscellaneous process equipment, valves, plastic wrapped items	C331-15
250	42 B-25 boxes, miscellaneous process equipment	C331-16
N/A	2 test weights	C331-18
251	3 cabinets, equipment and trash	C331-19
252	Plastic-wrapped equipment	C331-20
253	Plastic-wrapped equipment	C331-22
254	Empty	C331-23
255	Plastic-wrapped pallets, 4 plastic-wrapped motors	C331-24
256	Process equipment, 2 B-25s, compressors, cylinders, carts	C333-01
257	320 LLW drums (trash, PPE, asbestos, etc.)	C333-02
258	410 LLW drums (trash, metal, tacky mats, PPE, asbestos, etc.)	C333-03
259	237 LLW drums (wood, paper, plastic, metal, PPE, asbestos, etc.)	C333-04
260	333 LLW drums (scrap motors and parts, PPE, trash, etc.)	C333-05
261	239 LLW drums (trash, metal, tacky mats, PPE, asbestos, etc.)	C333-06
262	169 LLW drums (trash, PPE, Alumina trap mix, seal exhaust, etc.)	C333-07
263	PCB storage area-drums	C333-08
264	33 LLW drums (asbestos, UF_4 filters, etc.) and 23 pallets	C333-09
265	2 pallets	C333-10
266	Miscellaneous process equipment, storage cabinets, bagged PPE	C333-11
267	375 LLW drums (PPE, plastic, paper, trash, rags, metal, etc.)	C333-12
268	227 LLW drums (floor sweep, trash, etc.)	C333-13
269	116 LLW drums (trash) three 5-gallon container	C333-14
270	54 LLW drums (floor sweep, trash, Tyvek®, etc.)	C333-15
271	Storage cabinets, 16 B-25s, 8 oil drums	C333-16
272	Equipment, waste oils, metal parts, B-25s (scrap metal)	C333-16
273	80 LLW drums (sampling debris, RAD trash, plastic, etc.)	C333-17
274	Wood pallet	C333-18
275	Miscellaneous equipment	C333-19
276	Process equipment and materials, rolls of cable, plastic-covered equipment, 2 B-25s, file cabinets	C333-20
277	Cables, process equipment, air conditioners	C333-21
278	Equipment/metal parts	C333-22
279	Miscellaneous process equipment, rolls of cable, gasoline welder, scrap	C333-23

1. PROJECT TITLE/PARTICIPANT Environmental Management/Paducah Remediation Services, LLC (PRS)	2. DATE 06/29/07	3. IDENTIFICATION SITE Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE 04.11.02.02	5. WBS ELEMENT TITLE DMSAs	

280	171 LLW drums (trash, paper, Tyvek®, HVAC filters, floor-sweep, gaskets, etc.)	C333-24
281	241 LLW drums (sand, insulation) 20 pallets	C333-25
282	144 LLW drums (contaminated trash, asbestos)	C333-26
283	109 LLW drums (trash, asbestos, U-contaminated metal, paper, plastic, etc.)	C333-27
284	LLW drums (empty)	C333-28
285	66 LLW drums (trash, asbestos, floor sweep, etc.)	C333-29
286	28 LLW drums (C-340 slag, magnesium oxide, etc.)	C333-30
287	Miscellaneous process equip, junk pile (fenced area), metal, B-25s	C333-31
270	73 LLW drums adjacent to C333-15 (SWMU 270)	C333-33
288	198 LLW drums (trash, concrete, metal, etc.), four 5-gallon buckets	C333-34
289	LLW drums (asbestos, contaminated mats, trash)	C333-35
273	160 LLW drums adjacent to C333-17 (SWMU 273)	C333-36
290	24 barrels activated carbon, two transformer coils	C333-37
291	3 B-25s (RAD metal)	C333-38
292	Miscellaneous materials covered w/black plastic, process equipment, dry type transformers	C333-39
293	Process equipment (condenser) with converter wagon	C333-40
294	144 LLW drums (asbestos, trash, etc.), 2 transite (4x8)	C333-41
295	32 LLW drums (floor sweep, mop heads, etc.), box unit-one electrical cage in B-25, one 35-gallon plastic drum	C333-42
296	Drum storage, used oil drums, loose circuit boards, misc equip, process equip, hose, scrap metal, 318 LLW drums	C333-43
297	Empty	C335-01
298	Process equipment	C335-02
299	Miscellaneous process equipment, plastic-wrapped equipment, drums, tires, motors, 2 B-25s, and 132 LLW drums	C335-03
300	Process equipment	C335-04
301	Process equipment, scrap metal	C335-05
302	Plastic-wrapped process equipment	C335-06
303	Process equipment	C335-07
304	Process equipment, scrap metal	C335-08
305	Process equipment	C335-09
N/A	Empty	C335-10
306	Scrap metal, pallets, sandbags, open bin	C335-11
307	Pallet w/welded valves and hoses, molecular sieve stand	C335-12
308	73 PCB LLW drums	C337-01
309	121 PCB LLW drums	C337-02
310	Trash	C337-03
311	223 PCB LLW drums	C337-04

1. PROJECT TITLE/PARTICIPANT Environmental Management/Paducah Remediation Services, LLC (PRS)	2. DATE 06/29/07	3. IDENTIFICATION SITE Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE 04.11.02.02	5. WBS ELEMENT TITLE DMSAs	

312	310 PCB LLW drums	C337-05
313	116 PCB LLW drums	C337-06
314	120 PCB LLW drums	C337-07
315	54 PCB LLW drums	C337-08
316	88 PCB LLW drums	C337-09
317	40 PCB LLW drums	C337-10
318	45 PCB LLW drums	C337-11
319	777 PCB LLW drums	C337-12
320	172 PCB LLW drums	C337-13
321	94 PCB LLW drums	C337-14
322	42 PCB LLW drums	C337-15
323	48 PCB LLW drums	C337-16
324	87 PCB LLW drums	C337-17
325	115 PCB LLW drums	C337-18
326	228 PCB LLW drums	C337-19
327	320 PCB LLW drums	C337-20
328	182 PCB LLW drums, B-25s	C337-21
N/A	1 Drum containing pipes	C337-22
329	Miscellaneous equipment	C337-23
330	Miscellaneous equipment, scrap metal, process equip	C337-25
331	Miscellaneous equipment	C337-27
332	20 Type A boxes, 3 poly tanks	C337-29
333	118 PCB LLW drums, 2 boxes, 11 process traps	C337-30
334	Miscellaneous equipment and process equip	C337-31
335	2 PCB transformers	C337-32
336	4 PCB transformers	C337-33
337	Empty	C337-34
338	Miscellaneous equip, metal, fan, pipe	C337-35
339	Miscellaneous equip (two 20 ft Sealand containers)	C337-36
340	Empty	C337-37
341	Empty	C337-38
342	Empty	C337-39
343	204 PCB LLW drums	C337-40
344	Miscellaneous and process equipment	C337-41
345	293 LLW drums (rags, trash), cables, fan housing	C337-42
346	119 LLW drums (asbestos, rags, floor sweep, trash)	C337-43
347	144 LLW drums (asbestos, rags)	C337-44
348	264 LLW drums (asbestos, pads, absorbent)	C337-45
349	Process equipment (TCA degreaser and No. 1 Dissolver), 2 traps, vacuum cleaner, and miscellaneous equipment	C400-01
350	Previously stored miscellaneous scrap materials, process	C400-04

1. PROJECT TITLE/PARTICIPANT	2. DATE	3. IDENTIFICATION SITE
Environmental Management/Paducah Remediation Services, LLC (PRS)	06/29/07	Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE 04.11.02.02	**5. WBS ELEMENT TITLE** DMSAs	

	equipment, drums	
351	Test loop area, miscellaneous scrap materials and intact equipment, drums	C400-05
352	Tanks (5)	C400-06
353	Miscellaneous equipment	C400-07
354	Miscellaneous process equipment, plastic-wrapped lab equipment	C409-01
355	Process equipment, pipes, plastic-wrapped items, pallets, valves, piping, buckets, ladders, converter slings, scrap metal	C409-02
356	Varnish tanks and miscellaneous trash	C720-01
357	Vacuum welder, bucket, chair, floor fans	C720-02
358	Vertical turning blade, trash cans, hopper	C720-03
359	G and L horizontal mill (scrap equipment)	C720-04

BASIS OF ESTIMATE

1. Summary of Site Conditions

- The DMSA characterization work is in progress and ongoing.
- Characterization of 33 Priority A DMSAs, 1 Priority B DMSAs, and 22 Priority C DMSAs is complete.
- Forty DMSAs have been identified as Phase 3 and will not require additional NCS characterization or controls for characterization and disposition.
- Material disposition is complete in 16 Priority A DMSAs, 1 Priority B DMSA, and 6 Priority C DMSAs.
- No SWMU closures or permit modifications have been completed and no DMSAs have been returned to USEC control.

2. Estimating Methods

☐ Parametric ☐ Bottom Up ☒ Other: Bottom-up/Parametric

3. Sources of Estimating

Resources and quantities of materials were developed based on knowledge of the scope derived from review of the RFP and supporting technical documents and on the experience and professional judgment of the assigned estimator. During the transition period, the DMSAs were physically walked down and the remaining quantities were reviewed. These observed quantities were then compared with project documents provided by the current contractor in order to judge the relative accuracy and reliability of those documents. This comparison verified the documents, and the remaining quantities stated in project documents were used to determine time to complete the project and the number of resources required.

Labor – Estimated level of effort for skilled labor, professional, and management resource staffing is based on PRS and Duratek, Inc. (major subcontractor) experience on projects similar to the DMSA disposition project, including Fluor Fernald Waste Management, Idaho Falls Waste Management, and Hanford Waste Management. This prior experience coupled with the existing double staffing caused by two contractors working the project indicated that the current staffing was top-heavy. A new staffing level was determined based on significantly reduced overhead requirements, and the remaining quantities of material indicated that one less field crew would be required. Further reviews of the proposed staff indicated that key positions (DMSA Inspectors, Technical Writers, etc.) were missed and were added in the estimate.

1. PROJECT TITLE/PARTICIPANT	2. DATE	3. IDENTIFICATION SITE
Environmental Management/Paducah Remediation Services, LLC (PRS)	06/29/07	Paducah Project DOE Portsmouth/Paducah Project Office (PPPO)
4. WBS ELEMENT CODE	**5. WBS ELEMENT TITLE**	
04.11.02.02	DMSAs	

Equipment – Vendor quotes, national alliance contracts, and construction industry blue book [fuel, oil, gas, and materials (FOGM)] Actual vehicle and equipment requirements were determined based upon the new number of field crews and the staffing levels estimated. This led to the number of vehicles needed and amount of equipment required for each crew to be productive.

Materials – Vendor quotes or national alliance contracts

Other Direct Cost – Vendor quotes or National Alliance contracts

Transportation – Direct vendor quotes

Subcontracts – Subcontractor cost proposal or existing DOE contract pricing

4. Basis of Estimate (Unescalated values)

WASTE VOLUMES

See attached waste performance metrics, as applicable.

PROJECT SCHEDULE

See attached schedule.

BASELINE BY YEAR

See attached Baseline by Year Report.